Public Works (1902) Department.

G.O., No. 1301 I

DATED 11th Novr 1902.

[Despatch Abstract.]

Review of Irrigation in India in 1900-01.

Govt. of India —, Cmd. to the Chief Engr. for Irrign

Dspr

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GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

CIVIL WORKS.
Irrigation.

Simla, the 9th October 1902.

Review of Irrigation in India in 1900-1901.

READ—

Note by R. N. Burn, Esq., Accountant General, Public Works Department, upon the accounts of Revenue and Expenditure of Irrigation Works in India for 1900-1901.

Provincial Revenue and Administration Reports of Irrigation Works for 1900-1901.

Irrigation Works are divided into two main classes—Major and Minor Works,—the former being sub-divided into (I) Productive and (II) Protective Works. Capital and Revenue Accounts are kept for all Major Works, and the revenue due to them, whether directly in the form of water-rates and miscellaneous receipts, or, indirectly, on account of enhancements of land revenue due to irrigation, is shewn in the Annual Finance Accounts.

A.—Major Works.

I.—Productive Works.

2. The most important irrigation works in India are those classed as Productive Works, or works the capital cost of which has been wholly or mainly provided from loan funds in the expectation that they would prove directly remunerative, and that the net revenue derived from them would fully cover all charges for interest within a reasonable time after their completion. This expectation is never likely to be realized in respect of any of the four works constructed in Bengal, of the seven in Bombay (Deccan and Gujarat) and of the Kurnool Canal and Barur Tank in Madras. The capital outlay recorded against the thirteen works first named to the end of the year under review amounted to Rs. 9,74,50,186 on which the net revenue realized during the year yielded a return of 0·75 per cent. compared with 0·79 during 1899-1900 and 0·71 during 1898-99. The interest charges to the end of the year exceeded the net revenue by Rs. 8,66,59,796, the excess for the year being Rs. 30,79,185. The area irrigated by these works during the year was 810,460 acres.

3. These unfavourable financial results are, however, more than balanced by those attained on the 22 remaining productive works now in operation, the net revenue on which during the year was equivalent to a return of 10·11 per cent. on the capital outlay. The general financial results of all of this

class of works are shown separately by Provinces in the following statement. The totals are brought into comparison with those of the two previous years :—

Financial results of Productive Works in operation.

Province.	Number of works.	Area irrigated.	Capital outlay to end of 1900-1901.	Net revenue in 1900-1901.	Percentage of net revenue on capital outlay.
		Acres.	Rs.	Rs.	
Irrigation.					
Punjab	6	4,190,961	8,79,37,096	98,83,920	11·24
United Provinces of Agra and Oudh.	5	1,854,831	8,32,51,093	64,09,790	7·70
Madras	8	2,832,717	6,81,76,156	61,72,075	9·05
Sind	5	961,433	1,79,29,731	13,72,892	7·66
Bombay	7	26,902	1,09,92,622	1,34,532	1·22
Bengal	3	716,271	6,16,82,490	5,03,340	0·82
Do.	1*	...	26,15,242	15,272	0·58
Total Irrigation and Navigation, Imperial ...	35	10,583,115	33,25,84,430	2,44,91,821	7·36
Native States, Punjab ...	†	285,860	1,52,20,313	9,94,937	6·54
GRAND TOTAL, IMPERIAL AND NATIVE STATES—					
1900-1901	...	10,868,975	34,78,06,743	2,54,86,758	7·33
1899-1900	35	11,092,149	34,41,43,992	2,37,99,125	6·92
1898-1899	34	9,964,921	33,08,81,149	2,25,04,533	6·80

* Hijili Tidal Canal which is a purely navigation work.

† Part of the works in the Punjab.

The area irrigated has been exceeded only once in 1899-1900 and the percentage return, only once, in 1897-98, when it was 7·50. The net revenue is the largest on record.

4. Compared with the year 1899-1900 Punjab shows an increase of 455,599 acres; Madras, 145,843 acres; and Sind, 153,293 acres: the areas irrigated in these provinces are the largest on record. On the other hand, the United Provinces show a decrease of 762,041 acres; Bengal, 10,755 acres; and the Punjab Native States, 205,477 acres, while the area in Bombay was practically stationary.

The total value of the crops irrigated from productive works during the year is estimated at Rs. 34,32,51,061, which is slightly less than the total capital cost of the works.

5. In the Punjab compared with the year 1899-1900 increases occurred on the Bari Doab of 99,223 acres; Lower Sohag and Para, 33,418 acres; Chenab, 477,469 acres; and Sidhnai, 143,515 acres. The areas irrigated on the first three of these canals were the largest on record and the area on the Sidhnai is only 15,929 acres less than that of the record year 1897-98: the extremely rapid increase on the Chenab has been continued. Decreases occurred on the Western Jumna of 90,700 acres and on the Sirhind of 207,326 acres; the falling off on this latter canal was practically all due to the decrease on the Native State branches. On both these canals the decreases were due to favourable rains during the *rabi* which affected the demand for canal water.

6. In the United Provinces of Agra and Oudh compared with the year 1899-1900 there were decreases in the irrigated area on all the canals, *viz.*, Ganges, 487,497 acres; Lower Ganges, 125,013 acres; Agra, 74,250 acres; Eastern Jumna, 71,788 acres; and Fatehpur Branch, 3,493 acres. These unfavourable results were due to well-distributed rainfall in the *kharif* and to frequent rain in the winter months which brought the *rabi* crops to maturity without the aid of canal water.

7. In Madras compared with 1899-1900 there were increases in the irrigated area on the following works: Godavari, 75,907 acres; Kistna, 10,648 acres; Penner, 17,053 acres; Cauvery, 39,466 acres; Srivaikuntham, 4,625 acres; and Periyar, 13,637 acres. The areas irrrigated during 1900-01 on these works are the largest on record with the exception of the Cauvery which was exceeded by only 529 acres in 1898-99. There were decreases on Kurnool of 15,051 acres and Barur of 436 acres. On the whole, the area irrigated was the largest on record and is due to the favourable season and natural extension.

The Kurnool Canal still continues the most unremunerative work, but the return from it is gradually increasing. The heavy capital expenditure on it will, however, prevent it from ever becoming remunerative. The prospects of the Periyar Project are steadily improving, and there is hope that when the distributing works are completed, it will become remunerative. The decrease in the return from the Cauvery is due partly to increased capital outlay incurred (chiefly on remodelling the Upper Coleroon Anicut) and partly to increased maintenance charges.

8. In Sind compared with 1899-1900 there were increases in the irrigated area on the Desert Canal of 26,275 acres; Unharwah, 9,337 acres; Begari, 26,025 acres; and Jamrao, 164,187 acres. There was a decrease on the Eastern Nara of 72,531 acres; the area in the previous year was by far the largest on record and was due to a large increase of *rabi* irrigation which received a great stimulus by the high prices resulting from famine in other parts of India. The areas irrigated by the other canals were the largest on record; on the whole, compared with the previous year, there was an increase of 153,293 acres and the year was a record one. This is due to the Jamrao Canal on which irrigation on a large scale was first started during the year under review. On the whole of the works there was an increased return of 0·36 per cent.

9. In Bombay (Deccan and Gujarat) compared with 1899-1900 there was a decrease in area of 57 acres and on the return on the capital expenditure of 1·22 per cent. due to smaller assessment and collection of revenue. The works are small compared with those of other Provinces: the extent of the area irrigated by them continues steady.

10. In Bengal compared with 1899-1900 there were increases in the irrigated area on the Orissa Project of 2,712 acres and on the Midnapore Canal of 8,213 acres and a decrease on the Sone Project of 21,680: on the whole, there was a decrease of 10,755 acres, but the irrigated area was an average one.

The Hijili Canal, which is a purely navigation canal, paid 0·58 per cent. on the capital cost compared with 0·31 per cent. during the previous year. The navigation receipts on the Bengal Canals have suffered from the competition of the Bengal-Nagpur Railway.

11. In addition to the 35 productive works now in operation, seven new works were under construction during the year, *viz.*, the Mandalay and Shwebo Canals in Upper Burma, the Jhelum Canal in the Punjab, and the Dad, Naulakhi, Nasrat and Mahiwah Canals in Sind. The total outlay on these works to the end of the year (excluding interest charges) amounted to Rs. 1,27,67,200, of which Rs. 55,52,759 were expended during the year. In addition Rs. 36,27,408 were spent on works now in operation, principally on extensions or improvements which are likely to prove remunerative and to increase the efficiency of these works. The total capital expenditure on irrigation works during the year therefore amounted to Rs. 91,80,167 against Rs. 93,47,371 in the previous year. No new works were opened during the year.

There was not any capital expenditure during the year on navigation works.

II.—Protective Works.

12. Protective irrigation works are those which have been sanctioned in consideration of their value as famine protective works, but without any expectation of their becoming directly remunerative. The cost of their construction has been met from the famine grant. There are at present five of these works in operation, particulars of which are shown in the statement below:—

Financial results of Protective Works in operation.

Name of work.	Province.	Area irrigated in 1900-01.	Capital outlay to end of 1900-01.	Net revenue in 1900-01.	Return on capital outlay.
		Acres.	Rs.	Rs.	Per cent.
Swat River Canal	Punjab ...	166,031	41,38,881	4,30,565	10·41
Betwa Canal ...	United Provinces.	33,260	44,91,927	—36,004	...
Rushikulya Project	Madras ...	82,554	47,87,142	10,946	0·23
Mhasvad Tank ...	Bombay ...	5,842	20,79,455	10,666	0·51
Nira Canal ...	"	51,728	56,85,010	82,292	1·45
Total 1900-01 ...	...	339,415	2,11,82,415	4,98,465	2·35
" 1899-1900 ...	...	317,378	2,10,08,864	5,26,669	2·51
" 1898-1899 ...	...	302,745	2,07,87,660	4,77,230	2·30

The Swat River Canal, although sanctioned as a protective work, has proved a highly remunerative work from which the return continues to increase. The Betwa Canal has seldom paid even its working expenses, but improvements to it are under contemplation, which, it is hoped, will render it more remunerative. The Nira Canal has proved of great utility and the area irrigated by it increased from 27,200 acres in 1899-1900 to 51,728 acres during the year under review and was the largest on record. The other two works are not likely to prove remunerative.

13. The particulars given in the following statement relate to all major works (Productive and Protective) taken together :—

Irrigation statistics of Productive and Protective Works in operation.

Province.	Area irrigated.	Estimated value of crops.	Average value of crops per acre.	Average rate of revenue assessed per acre.	Working expenses, rate per acre irrigated.	Percentage of working expenses on gross revenue.
	Acres.	Rs.	Rs.	Rs.	Rs.	Per cent.
Punjab-Imperial ...	4,356,992	12,05,00,565	27·7	3·4	1·0	29·4
Punjab-Native States ...	285,860	71,96,006	25·2	3·6	1·9	35·6
United Provinces ...	1,888,091	7,39,23,128	39·2	4·3	1·7	33·6
Madras	2,915,271	10,68,56,303	36·7	4·1	0·9	20·4
Sind	961,434	1,49,70,355	15·6	1·9	0·4	23·5
Bombay	84,472	65,18,258	77·2	4·8	2·5	47·8
Bengal	716,271	2,46,69,000	34·4	1·9	1·7	71·2
Total 1900-01 ...	11,208,391	35,46,33,615	31·6	3·5	1·1	29·7
" 1899-1900 ...	11,409,527	36,02,22,917	31·6	3·4	1·1	30·3
" 1898-99 ...	10,267,666	29,11,24,611	28·3	3·3	1·7	32·5

Compared with the year 1899-1900 the general results are almost identically the same, but there are considerable variations in some of the Provinces, the largest of which are noted below :—

In respect of the average value of the crops Punjab Imperial has decreased from Rs. 37·6 and Punjab Native States from Rs. 35·6 per acre which is due to decreases in the area under, and value of, wheat and barley. Madras has increased from Rs. 19·4 per acre owing to the higher prices obtained for rice and Bombay from Rs. 58·7 per acre owing to the higher prices obtained for sugar.

Only in Bombay has there been any large variation in the average assessment, which in this case has decreased from Rs. 6·6 per acre owing to a large decrease in the area under sugarcane and gardens and orchards.

Working expenses have risen in the Punjab Native States and United Provinces from Rs. 1·1 per acre. In both cases there has been an increase in the charges for repairs and establishment and a considerable decrease in the irrigated area. In Bombay they have fallen from Rs. 3·5 per acre owing to an increase in area accompanied by a diminution in the cost of maintenance and repairs.

These variations account for the variations in the percentage of working expenses on gross revenue.

The total area irrigated has decreased by 201,136 acres and the estimated value of crops by Rs. 55,89,302.

B.—Minor Works.

III.—Works for which Capital and Revenue Accounts are kept.

14. All expenditure incurred in the construction and development of minor irrigation works is met from revenue. These works are treated as Provincial in all Provinces except Sind, Bombay, Baluchistan, Rajputana and the Punjab, in which all but a few works are Imperial. Capital and Revenue Accounts are kept for 79 of the larger and more important minor works, and the financial results attained during the year under review are shown in the following statement:—

Financial results of Minor Works in operation for which Capital and Revenue Accounts are kept.

Province.	Number of works.	Area irrigated.	Capital outlay to end of 1900-01.	Net revenue in 1900-01.	Percentage of net revenue on capital outlay.	Rate of revenue assessed per acre.
Irrigation.		Acres.	Rs.	Rs.	Per cent.	Rs.
Punjab	5	602,189	25,45,739	3,27,000	12·84	1·8
Madras	24	511,603	97,89,568	5,08,838	5·20	3·3
United Provinces ...	4	113,793	29,69,954	1,50,861	5·08	2·3
Bombay (Deccan and Gujarat).	27	39,922	74,46,862	—1,20,495	...	1·7
Bombay (Sind) ...	7	882,956	39,83,602	10,43,025	26·18	2·3
Rajputana	3	34,767	29,49,073	—3,268	...	3·8
Baluchistan	2	5,232	16,12,782	13,383	0·83	6·7
Bengal	1	...	7,06,520	—1,152	...	...
Burma (Embankments) ...	...	434,994	33,70,009	7,31,866	21·72	2·3
Total Irrigation—1900-01 ...	73	2,625,456	3,53,74,149	26,50,056	7·49	2·4
1899-1900 ...	72	2,512,229	3,43,40,074	19,17,256	5·58	2·3
1898-1899 ...	72	2,619,926	3,33,33,810	29,78,660	8·93	2·4
Navigation, 1900-01.						
Madras	4	...	92,96,571	—24,037	...	...
Bengal	2	...	1,11,35,805	1,53,828	1·38	...
Total Navigation ...	6	...	2,04,32,376	1,29,791	0·63	...

15. The capital outlay during the year on Irrigation Works amounted to Rs. 10,34,075. The expenditure in Rajputana was Rs. 1,23,863; in the Punjab, Rs. 3,19,537; in Madras, Rs. 2,52,507; and in Bombay, Rs. 2,73,171, and was incurred chiefly on Famine Relief Works.

16. Compared with 1899-1900, when the revenue was very small, there have been increases of revenue of Rs. 6,55,318 and of 338,497 acres in the irrigated area. Both the total revenue and irrigated area are larger than they were last year (which was a very unfavourable one), despite the transfer of the Lower Sutlej and Chenab Inundation Canals from this class of works. But for this transfer the area and revenue would have been the largest on record. There are increases of the irrigated area in Rajputana of 21,371 acres; Baluchistan, 2,141 acres; Punjab, 254,537 acres; Sind, 118,639 acres; and Bombay, 1,3[illegible]0 acres. These increases are generally due to a better supply of water. There are small decreases in the United Provinces of 3,658 acres and in Madras of 6,073 acres.

The working expenses exceeded the gross revenue in Rajputana by Rs. 3,268 and in Bombay by Rs. 1,20,495. In this latter Province the maintenance charges are always high owing to the small areas irrigated by the works and in a great measure to the expenditure necessary to maintain their storage reservoirs. In all other Provinces the working expenses were much less than the gross revenue.

The area shown in Burma is not under irrigation, but represents the area of cultivation on lands reclaimed by river flood embankments, the revenue of which is credited to the capital account of the works. This area in 1900-01 exceeded that in 1899-1900 by 10,220 acres.

IV.—Works for which only Revenue Accounts are kept.

17. There are numerous Minor Works for which separate Capital Accounts are not kept, either because the works are too small, or because they have not been constructed by the British Government which has simply undertaken their improvement and maintenance. For such works only Revenue Accounts are maintained; they are credited with a share of the land revenue depending on their maintenance and are debited with all expenditure incurred on construction, extension, improvements and maintenance. Particulars for the year 1900-01 are shown by the Provinces in the statement below:—

Financial Results of Minor Works for which only Revenue Accounts are kept.

Province.	Area irrigated.	Revenue receipts.	Charges.	Net revenue.
	Acres.	Rs.	Rs.	Rs.
Burma	576,936	19,50,841	13,38,198	6,12,643
Bengal	...	1,05,410	1,28,948	—23,538
Punjab	707,525	7,05,780	4,27,021	2,78,759
Bombay, including Sind	1,297,368	32,22,706	10,15,768	22,06,938
Total 1900-01 ...	2,581,829	59,84,737	29,09,935	30,74,802
„ 1899-1900 ...	1,886,171	50,65,347	26,91,464	23,73,883
„ 1898-1899 ...	1,925,661	48,70,462	23,46,203	25,24,259

The large increases under all heads are due to the transfer to this class of works of the Lower Sutlej and Chenab Inundation Canals in the Punjab which were formerly classed under "Works for which Capital and Revenue Accounts are kept." They were transferred this year to this class, because the capital outlay incurred on them has been little more than nominal. In the year under review the area irrigated by them was 391,074 acres and the gross revenue Rs. 6,18,629.

V.—Works for which neither Capital nor Revenue Accounts are kept.

18. There is a third important class of Minor Works in the Madras Presidency for which neither Capital nor Revenue Accounts are kept. These include over 28,000 tanks and 6,000 irrigation channels, the improvements and repairs of which are executed by the Public Works Department, or, in the case of the smaller works, by Civil Officers: the expenditure during 1900-01 amounted to Rs. 22,82,627, of which about one quarter was spent by Civil Officers. The areas charged as irrigated by these small Works in 1900-01 aggregated 3,173,250 acres, or more than all the Major works in the Presidency taken together, and the revenue derived therefrom amounted to Rs. 79,85,620, the corresponding figures for the previous year being 2,827,938 acres and Rs. 72,07,545.

19. The following table summarizes the results of irrigation for all India during 1900-01 and compares them with those of the two previous years :—

Financial and Irrigational Results of Irrigation Works in operation in India.

Class of work.	Capital outlay to end of year on works in operation.	Gross revenue during the year.	Net revenue during the year.	Percentage of net revenue on capital outlay to end of year.	Area irrigated.
	Rs.	Rs.	Rs.		Acres.
I and II.—Major Works. { I.—Productive; II.—Protective }	36,89,89,158	3,80,05,885	2,59,85,223	7·04	11,208,390
III.—Minor Works for which Capital and Revenue Accounts are kept.	5,58,06,525	52,91,853	27,79,847	4·98	2,625,456
IV.—Minor Works for which only Revenue Accounts are kept.	...	59,84,737	30,74,802	...	2,581,829
V.—Works for which neither Capital nor Revenue Accounts are kept.	...	81,09,531	44,89,947	...	3,230,616
Total 1900-01 ...	42,47,95,683	5,73,92,006	3,63,29,819	(a) 6·77	19,646,291
" 1899-1900 ...	41,97,47,941	5,17,91,726	3,39,00,108	(a) 6·28	18,663,416
" 1898-1899 ...	40,52,78,439	5,43,88,030	3,55,60,068	(a) 6·43	17,974,019

(a) Percentages calculated on works of classes I, II and III.

The total area fell little short of 20 million acres and is the largest on record, while the value of the crops raised under the works for which capital accounts are kept is estimated at Rs. 41½ crores, or nearly 98 per cent. of the capital outlay expended on them.

ORDER.—Ordered that this Review, with a copy of the note by the Accountant General, Public Works Department, be forwarded to the Finance and Commerce and Revenue and Agricultural Departments and to the Local Governments and Administrations in the Public Works Department noted on the margin for information.

The Governments of Madras, Bombay, Bengal, the United Provinces of Agra and Oudh, the Punjab and Burma.
The Honourable the Chief Commissioners of the Central Provinces, Assam and Coorg.
The Honourable the Resident at Hyderabad.
The Honourable the Agents, to the Governor General for Central India, Rajputana and Baluchistan. & N.W. Frontier Province.
The Accountant General, Public Works Department.

Ordered, also, that the Review and the note be published in the Supplement to the *Gazette of India.*

Ordered, further, that a copy of the Review and note be forwarded to His Majesty's Secretary of State for India for information.

T. Higham.

Secretary to the Govt. of India.

Document accompanying.

Note by the Accountant General, Public Works Department, dated 5th May 1902. } will follow.

To

The Joint Secretary to the Govt. of Madras, Public Works Deptt. Irrigation Branch

G. C. Press, Simla.—No. 1098 P. W. D.—10-10-02.—500

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ACCOMPANIMENT TO PUBLIC WORKS DEPARTMENT REVIEW No. 1228 C. W. I., DATED 9TH OCTOBER 1902.

NOTE BY R. N. BURN, ESQ., ACCOUNTANT GENERAL, PUBLIC WORKS DEPARTMENT, UPON THE ACCOUNTS OF REVENUE AND EXPENDITURE OF IRRIGATION WORKS IN INDIA FOR 1900-01.

(The figures in the statements embodied in this note are taken from the Finance and Revenue Accounts of the Government of India, Administrative Accounts of the Public Works Department, the Revenue Reports of Irrigation Works and the statement of Financial results of Irrigation operations in India.)

1. Irrigation Works in India are divided into Major and Minor Works; Major Works being further sub-divided into Productive, or those which are expected to pay working expenses and interest on capital invested, and Protective. For the purposes of this note Minor Works are sub-divided into—

(*a*) Works for which Capital and Revenue Accounts are kept.

(*b*) Works for which Capital Accounts are not kept.

WORKS FOR WHICH CAPITAL AND REVENUE ACCOUNTS ARE KEPT.

2. The general financial result of all works—both Irrigation and Navigation—for which Capital and Revenue Accounts are kept is as follows:

—	Productive works.	Protective works.	Minor works.	TOTAL.
	Rs.	Rs.	Rs.	Rs.
CAPITAL OUTLAY—				
During 1900-01	91,77,280	4,27,799	8,77,250	1,04,82,329
To end of 1900-01	34,53,51,630	2,24,53,655	5,58,06,525	42,36,11,810
REVENUE ACCOUNT, 1900-01—				
Gross Revenue	3,56,28,141	8,32,403	52,91,853	4,17,52,397
Maintenance and working	1,11,36,320	3,33,938	25,12,006	1,39,82,264
Net Revenue	2,44,91,821	4,98,465	27,79,847	2,77,70,133
Interest	1,29,79,409	8,40,156	...	...
Net profit after paying interest on capital.	1,15,12,412	—3,41,691	...	...
Percentage of net revenue of the year on the capital outlay to end of the year.	7·09	2·22	4·98	6·55
Against in 1899-1900	6·72	2·41	3·74	6·10
" " 1898-99	6·64	2·22	5·75	6·28

Productive Works.

3. There are 42 works so classed, one of which, the Hijili Tidal Canal in Bengal, is a purely navigation work, the rest being irrigation canals. Of these 42 canals seven were not open by the end of 1900-01, and thirteen, amongst which are all the canals in Bengal and in the Deccan and Gujarat, have failed to fulfil the productive conditions.

4. By the end of 1900-01, the State had spent Rs. 34,53,51,630 on these productive works, and received during that year a net revenue of Rs. 2,44,91,821 or 7·09 per cent. on the capital invested, or, if open works alone be considered, a return of 7·36 per cent. on Rs. 33,25,84,430, the capital cost of the works open. Further these open canals, after paying each year's working expenses and interest charges, have brought in an accumulated surplus profit of Rs. 9,13,12,994, equal to 27·46 per cent. of the capital invested in them.

5. At the end of 1900-01 there were 34,403 miles of open productive canals, an increase of 1,091 over the mileage open at end of the previous year. This increase is due to the opening of the Jamrao Canal in Sind, and to additions to open works. The acreage irrigated during 1900-01, amounted to 10,583,115 acres, a decrease of 18,118 over that of the previous year, the result of a large decrease of 762,041 acres in the United Provinces, compensated by increases of 455,599, 145,843 and 153,236 in the area irrigated in the Punjab, Madras and Bombay, due to development of irrigation from the Chenab and Jamrao Canals and the Periyar project.

6. During 1900-01 the canals in the Punjab showed collectively a better result than the canals in any other province ; though there were six canals* with better results than any canal in the Punjab could show. One of these six canals, the Cauvery Delta System, gave a net return of 30·81 per cent. on the capital invested.

* *Madras.*
1. Cauvery Delta System.
2. Godavari Delta System.
3. Kistna Delta System.

Sind.
4. Unharwah project.
5. Begari Canal.

United Provinces.
6. Eastern Jumna Canal.

7. Statements I and II show in detail the financial results of individual productive works and the gross revenue, the irrigated area and the mileage open.

Protective Works.

8. As the term implies, canals so classed are constructed on a consideration of the protection they give against famine, without any expectation of a return sufficient to pay interest and working expenses. There are eleven canals so classed, five of which are still under construction; and of the eleven six are located in the Deccan and Gujrat.

The capital expenditure on these eleven canals to the end of 1900-01 amounted to Rs. 2,24,53,655, or to Rs. 2,11,82,415 if the expenditure on unopened works and on the Gokak Canal is deducted. These opened canals gave a net revenue of Rs. 4,98,465 of which the Swat River Canal in the Punjab accounted for all but Rs. 67,900, that canal having repaid the maintenance and interest charges of the year and returned a net profit of Rs. 2,71,088, equal to 6·55 per cent. on the capital invested in it.

9. At the end of the year there were 1,347 miles of open protective canals, or 29 miles more than what were in operation at the end of the previous year. The area irrigated during the year amounted to 339,415 acres, 166,031 of which were irrigated by the Swat River Canal. The acreage irrigated during the year was in excess of that irrigated in 1899-1900 by 22,036 acres. With the exception of the Betwa Canal in the United Provinces and the Mhasvad Tank in the Deccan and Gujarat, all projects showed slight increases, but the only large increase was in the area irrigated by the Nira Canal, which irrigated 90 per cent. more than what it irrigated in the previous year, though the open mileage increased by but 11 miles.

10. Statements III and IV show in detail the financial results of individual protective works, and the gross revenue, the irrigated area and the mileage open of each.

Minor Works.

WORKS FOR WHICH CAPITAL AND REVENUE ACCOUNTS ARE KEPT.

11. There are 81 works so classed, 34 of which are in Bombay and 28 in Madras. Of these 81 works six are for navigation, four in Madras and two in Bengal.

12. On the Irrigation Works alone the capital outlay to end of 1900-01 amounted to Rs. 3,53,74,149, and the net revenue during that year to Rs. 26,50,056 or a return of 7·49 per cent. on the capital invested. The canals in Sind were the most lucrative, the collective return from them amounting to 26·18 per cent., the Ghar Canal alone returning 105·07 per cent.

13. During 1900-01, these Minor Irrigation Works irrigated 2,505,694 acres, an increase of 332,510 or 15·30 per cent. over the area irrigated during the previous year.

14. The capital outlay to end of 1900-01, on the six navigation canals amounted to Rs. 2,04,32,376 and the net return during the year to Rs. 1,29,791. The whole of this was brought in by the Calcutta and Eastern canals, which gave a return of 2·41 per cent. on the capital invested in them. All the other navigation canals worked at a loss.

15. Statements V and VI show the financial result, the gross revenue, the irrigated area and the open mileage of individual minor works.

WORKS FOR WHICH CAPITAL ACCOUNTS ARE NOT KEPT.

16. Works so classed are all small works, many of which were constructed at the time of the native rule in India. No detailed accounts of these works are kept, and the enhanced land revenue due to them is assessed and collected along with the ordinary land revenue and accounted for in the Civil accounts.

17. The following statement shows the receipts and expenditure on these works, and compares the transactions of the year 1900-01 with those of the previous four years:

	Imperial.		Provincial.		Local.		Total.	
	Direct Receipts.	Expenditure.	Direct Receipts.	Expenditure.	Direct Receipts.	Expenditure.	Direct Receipts.	Expenditure.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Rajputana	...	608	...	...	...	...	...	608
Baluchistan	...	535	...	...	...	...	...	535
Central Provinces	...	33,921	...	...	...	...	...	33 921
Burma	...	...	1,20,629	14,80,105	...	5,034	1,20,629	14,85,139
Bengal	...	...	2,69,619	7,81,390	15,145	553	2,84,764	7,81,943
United Provinces	...	16,649	...	76,066	...	...	...	92,715
Punjab	56,168	4,89,315	63,785	53,757	34,338	7,555	1,54,291	5,50,627
Madras	...	...	63,243	28,94,682	...	2,697	63,243	28,97,379
Bombay	84,370	17,16,940	...	...	...	...	84,370	17,16,940
Total for 1900-01	1,40,538	22,57,968	5,17,276	52,86,000	49,483	15,839	7,07,297	75,59,807
1899-1900	67,686	17,17 665	6 90,998	50,28,394	47,762	20,782	8,06,446	67,66 841
1898 99	79,090	16,17,890	6,91,350	47,97,590	54,730	23,450	8,25,170	64,38,930
1897-98	68,720	17,47,500	6,31 770	46,28,230	1,14,340	77,250	8,14,830	64,52,980
1896-97	73,860	24,70,020	5,72,240	47,27,010	92,440	1,21,860	7,38,540	73,18,890

18. The falling off of Rs. 99,149 in the receipts during 1900-01 occurred chiefly in Burma, and was due to refunds of double assessment of water-rates recovered from land-holders on canals in the Minbu District. The increase in the expenditure was due partly to the transfer to this head of the Lower Sutlej Inundation Canals from the class of works for which Capital and Revenue Accounts are kept, partly to a larger programme of expenditure in Madras, and partly to heavier adjustments of normal cost of famine relief works in Bombay.

General.

19. The general result of irrigation works for which Capital and Revenue Accounts are kept, is brought out in Statement VII. At the end of 1900-01 the State had spent on Capital outlay Rs. 40,05,64,192, and during the year received a net revenue of Rs. 2,76,25,070 equivalent to 6·90 per cent. on the capital invested. The area irrigated and protected amounted to 13,547,986 acres, or 21, 169 square miles.

20. The revenue realised and the cost of maintenance per acre are compared in the following table:

Province.	Revenue realised per acre irrigated.	Cost of maintenance per acre irrigated.
	Rs.	Rs.
Bengal	2·45	1·75
Bombay	1·90	·62
Madras	2·63	·68
United Provinces	4·98	1·72
Punjab	3·14	·99
Burma	2·28	·60
Rajputana	2·62	2·71
Baluchistan	6·73	4·17

Taking the first five provinces where irrigation is extensive, the receipts per acre irrigated are highest in the United Provinces, due to extensive irrigation during the *rabi* season of 1899-1900, the collections on account of which were made during 1900-01. The lowest rate is in Bombay, due to a low assessment rate in Sind. The cost of maintenance per acre irrigated is highest in Bengal and the United Provinces, and lowest in Bombay.

R. N. BURN,

Accountant-General, P. W. D.

STATEMENT No. I.

Financial results of individual Productive irrigation Works during, and to the end of, 1900-01.

Number of works.	Major Works.	Capital outlay to end of 1900-01. Direct.	Indirect.	Total.	Revenue Account for 1900-01. Gross Revenue.	Maintenance and working.	Net revenue.	Interest.	Net profit.	Percentage of net revenue on the Capital outlay.	Revenue Account to end of 1900-01. Gross revenue.	Maintenance and working.	Net revenue.	Interest.	Net profit.
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	R.
	Productive.														
2	BURMA. *Irrigation.*														
	Mandalay Canal	35,03,319	66,122	35,69,441	...	...	...	1,21,844	−1,21,844	...	...	...	...	2,63,883	−2,63,883
	Shwebo Canal	1,31,773	1,646	1,33,419	...	...	...	2,524	−2,524	...	...	...	...	2,524	−2,524
	Total Burma	36,35,092	67,768	37,02,860	..	...	...	1,24,368	−1,24,368	...	...	...	...	2,66,407	−2,66,407
4	BENGAL. *Irrigation.*														
	Orissa Project	2,58,59,296	5,87,321	2,64,46,617	4,08,145	4,51,951	−43,806	10,33,692	−10,77,498	...	80,13,219	1,15,09,442	−34,96,223	2,58,63,198	−2,93,59,421
	Midnapore Canal	82,88,766	1,84,661	84,73,427	2,33,373	1,72,402	60,971	3,31,551	−2,70,580	·72	66,08,607	62,53,500	3,55,107	93,87,230	−90,32,123
	Sone Project	2,58,44,320	9,18,126	2,67,62,446	11,10,586	6,24,411	4,86,175	10,33,569	−5,47,394	1·82	1,95,95,711	1,47,36,388	48,59,323	2,59,10,782	−2,10,51,459
		5,99,92,382	16,90,108	6,16,82,490	17,52,104	12,48,764	5,03,340	23,98,812	−18,95,472	...	3,42,17,537	3,24,99,330	17,18,207	6,11,61,210	−5,94,43,003
	Navigation.														
	Hijili Tidal Canal	25,51,729	63,513	26,15,242	47,348	32,076	15,272	1,02,069	−86,797	·58	15,21,806	12,29,664	2,92,142	24,45,724	−21,53,582
	Total Bengal	6,25,44,111	17,53,621	6,42,97,732	17,99,452	12,80,840	5,18,612	25,00,881	19,82,209	·81	3,57,39,343	3,37,28,994	20,10,349	6,36,06,934	−6,15,96,585
5	UNITED PROVINCES OF AGRA AND OUDH. *Irrigation.*														
	Ganges Canal	2,83,79,836	17,63,757	3,01,43,593	46,58,265	11,93,265	34,65,000	11,33,520	23,31,480	11·49	9,43,02,174	3,75,45,171	5,67,57,003	4,30,98,013	1,27,58,990
	Lower Ganges Canal	3,37,24,680	24,28,601	3,61,53,281	23,94,403	11,30,338	12,64,065	13,47,439	−83,374	3·50	4,99,32,433	2,17,56,982	2,81,75,451	3,07,97,401	−26,21,950
	Agra Canal	89,28,692	6,88,591	96,17,283	9,25,600	2,47,959	6,77,641	3,56,143	3,21,498	7·05	1,41,46,494	61,90,741	79,55,753	93,65,106	−14,09,353
	Eastern Jumna Canal	37,45,714	2,43,447	39,89,161	14,82,347	4,50,566	10,31,781	1,48,242	8,83,539	25·86	3,94,75,288	1,20,12,019	2,74,63,269	53,70,558	2,20,92,711
	Fatehpur Branch of Lower Ganges Canal	30,62,159	2,85,616	33,47,775	84,891	1,13,588	−28,697	1,20,650	−1,49,347	...	1,61,221	1,69,173	−7,952	4,52,747	−4,60,699
	Total United Provinces	7,78,41,081	54,10,012	8,32,51,093	95,45,506	31,35,716	64,09,790	31,05,994	33,03,796	7·70	19,80,17,610	7,76,74,086	12,03,43,524	8,99,83,825	3,03,59,699
7	PUNJAB. *Irrigation.*														
	Western Jumna Canal, including Sirsa Branch	1,63,40,231	7,94,801	1,71,35,032	25,15,035	9,54,516	15,60,519	6,52,392	9,08,127	9·10	7,47,70,479	2,43,33,182	5,04,37,297	1,39,16,918	3,65,20,379
	Bari Doab Canal	1,77,92,561	6,55,612	1,84,48,173	32,48,876	8,75,819	23,73,057	7,07,928	16,65,129	12·86	6,01,10,449	2,19,83,411	3,81,27,038	2,38,98,168	1,42,28,870
	Sirhind	2,32,80,318	11,90,189	2,44,70,507	30,51,461	8,20,912	22,30,549	9,28,740	13,01,809	9·11	2,81,79,039	97,91,482	1,83,87,557	2,02,47,838	−18,60,281
	Lower Sohag and Para Canal	7,06,349	27,701	7,34,050	1,42,447	1,23,364	19,083	28,055	−8,972	2·60	15,07,151	10,17,853	4,89,298	4,14,569	74,729
	Chenab Canal	2,52,63,656	6,21,487	2,58,85,143	49,08,480	12,81,292	36,27,188	9,95,767	26,31,421	14·01	1,80,53,159	62,99,236	1,17,53,923	74,48,080	43,05,843
	Sidhnai "	12,4,914	39,277	12,64,191	2,22,828	1,49,304	73,524	48,513	25,011	5·81	34,70,784	14,71,260	20,05,524	5,96,096	14,09,428
	Jhelum "	68,46,889	1,49,358	69,96,247	...	...	...	2,01,009	−2,01,009	...	...	...	...	3,08,192	−3,08,192
	Total Punjab	9,14,54,918	34,78,425	9,49,33,343	1,40,89,127	42,05,207	98,83,920	35,62,404	63,21,516	10·41	18,60,97,061	6,48,96,424	12,12,00,637	6,68,29,861	5,43,70,776

	MADRAS.														
	Irrigation.														
	Godavari Delta System	1,13,02,849	19,10,488	1,32,13,337	31,94,847	8,63,423	23,31,424	4,50,461	18,80,963	17·64	7,81,97,211	2,27,92,162	5,54,05,049	1,48,20,449	4,05,84,600
	Kistna " "	1,28,26,009	9,29,717	1,37,55,726	28,59,361	6,74,586	21,84,775	5,10,170	16,74,605	15·88	5,00,96,647	1,55,40,449	3,45,56,198	1,11,26,605	2,34,29,593
	Penner River Canals	49,07,756	9,61,982	59,59,738	3,78,417	54,097	3,24,320	1,97,724	1,26,596	5·44	63,15,019	13,94,222	49,20,797	41,25,419	7,95,578
	Cauvery Delta System	26,12,516	1,47,258	27,59,774	9,70,635	1,20,324	8,50,311	94,703	7,55,608	30·81	2,94,21,435	22,51,277	2,71,70,178	21,96,741	2,49,73,437
	Srivaikuntham Anicut System	13,88,820	1,02,259	14,91,079	1,26,340	21,168	1,05,172	55,425	49,747	7·05	24,92,105	8,13,380	16,78,725	15,21,577	1,57,148
	Kurnool Canal	2,17,30,071	2,923	2,17,32,994	1,69,548	1,01,894	67,654	8,69,077	—8,01,423	·31	21,58,269	26,73,304	—5,15,035	1,60,40,895	—1,65,55,930
	Barur Tank	4,03,924	22,914	4,26,838	10,747	5,066	5,681	16,130	—10,449	1·33	1,01,380	54,014	47,366	2,39,817	—1,92,451
	Periyar Project	85,58,295	2,78,375	88,36,670	4,09,249	1,06,511	3,02,738	3,41,268	—38,530	3·43	11,77,228	4,99,146	6,78,082	29,49,467	—22,71,385
	TOTAL MADRAS	6,38,20,240	43,55,916	6,81,76,156	81,19,144	19,47,069	(a) 61,72,075	25,34,958	36,37,117	9·05	16,99,59,314	4,60,17,954	12,39,41,360	5,30,20,970	7,09,20,390
9	**BOMBAY.**														
	SIND.														
	Irrigation.														
	Desert Canal	17,94,784	55,490	18,50,274	2,10,607	68,761	1,41,846	64,170	77,676	7·67	33,62,682	14,45,436	19,17,246	11,18,707	7,98,539
	Unharwah	6,23,663	17,111	6,40,774	1,64,841	42,961	1,21,880	24,659	97,221	19·02	14,20,970	4,00,208	9,30,762	2,89,506	6,41,256
	Begari Canal	16,57,544	49,255	17,06,799	5,02,692	96,628	4,06,064	66,302	3,39,762	23·79	83,25,069	29,87,467	53,37,602	18,04,918	35,32,684
	Eastern Nara Works	59,32,488	2,08,636	61,41,124	5,73,199	1,36,524	4,36,675	2,40,280	1,96,395	7·11	1,14,21,190	42,74,112	71,47,078	62,13,745	9,33,333
	Jamrao Canal	74,05,146	1,85,614	75,90,760	3,42,878	76,451	2,66,427	2,76,955	—10,528	3·51	3,56,796	77,280	2,79,510	9,19,970	—6,40,460
	Dad Canal	15,34,293	39,443	15,73,736	...	...	..	49,257	—49,257	...	...	...	...	1,17,521	—1,17,521
	Naulakhi Canal	150	...	150	...	...	...	6	6	...	...	...	...	23	—23
	Nasrat Canal	2,77,418	4,397	2,81,815	...	...	...	5,717	—5,717	...	...	...	...	6,222	—6,222
	Mahiwah Project	2,07,059	5,333	2,12,392	...	...	...	3,882	—3,882	...	...	...	...	3,882	—3,882
	Total Sind	1,94,32,545	5,65,279	1,99,97,824	17,94,217	4,21,325	13,72,892	7,31,228	6,41,664	6·87	2,48,86,707	92,74,509	1,56,12,198	1,04,74,494	51,37,704
7	DECCAN AND GUJARAT.														
	Irrigation.														
	Hathmati Canal	4,90,925	26,913	5,17,838	231	5,380	—5,149	19,637	—24,786	...	1,59,474	2,03,620	—44,146	5,51,572	—5,95,718
	Lower Panjhra River Works	4,45,382	23,234	4,68,616	15,233	4,957	10,276	17,815	—7,539	2·19	3,72,873	1,82,921	1,89,952	5,25,334	—3,35,382
	Kadva River Works	7,28,580	31,039	7,59,619	5,981	27,883	—21,902	28,992	—50,894	...	2,06,741	2,46,207	—39,466	6,00,493	—6,39,959
	Lakh Canal	3,52,416	19,445	3,71,891	701	13,737	—13,036	14,098	—27,134	...	45,694	2,47,355	—2,01,661	4,54,090	—6,55,751
	Mutha Canals	64,32,361	2,37,019	66,69,380	[illegible],11,846	73,041	1,28,805	2,57,167	—1,18,362	2·09	46,98,909	17,83,502	29,15,407	66,74,187	—37,58,780
	Ekruk Tank	12,28,117	1,12,269	13,40,386	24,110	7,995	16,115	49,125	—33,010	1·20	4,29,568	4,95,997	—66,429	15,19,139	—12,85,568
	Krishna Canal	8,18,545	46,347	8,64,892	22,593	13,170	9,423	32,742	—23,319	1·09	8,65,540	5,32,032	3,33,508	10,77,180	—7,43,672
	Total Deccan and Gujarat	1,04,96,356	4,96,266	1,09,92,622	2,80,695	1,46,163	1,34,532	4,19,570	—2,85,044	1·22	67,78,799	36,91,634	30,87,165	1,14,01,995	—83,14,830
	TOTAL BOMBAY.	2,99,28,901	10,61,545	3,09,90,446	20,74,912	5,67,488	(b) 15,07,424	11,50,804	3,56,620	4·86	3,16,65,506	1,29,66,143	1,86,99,363	2,18,76,489	—31,77,126
24	TOTAL PRODUCTIVE. { Irrigation	32,66,72,614	1,60,63,774	34,27,36,388	3,55,80,793	1,11,04,244	2,44,76,549	1,28,77,340	1,15,99,209	7·14	61,99,57,028	23,40,53,937	38,59,03,091	29,31,38,762	9,27,64,329
	Navigation	25,51,729	63,513	26,15,242	47,348	32,076	15,272	1,02,069	—86,797	·58	15,21,806	12,29,664	2,92,142	24,45,724	—21,53,582
	TOTAL	32,92,24,343	1,61,27,287	34,53,51,630	3,56,28,141	1,11,36,320	2,44,91,821	1,29,79,409	1,15,12,412	7·09	62,14,78,834	23,52,83,601	38,61,95,233	29,55,84,486	9,06,10,747

(a) Excludes revenue due to old irrigation.

(b) Excludes revenue due to old irrigation.

STATEMENT No. II.

Productive Irrigation Works.—Gross Revenue, Irrigated area and mileage open.

Major Works.	Gross Revenue.			Irrigated area in acres.			Mileage in operation (including distributaries).			Area irrigated for each mile of canal open.		
	1898-99.	1899-1900.	1900-01.	1898-99.	1899-1900.	1900-01.	1898-99.	1899-1900.	1900-01.	1898-99.	1899-1900.	1900-01.
	Rs.	Rs.	Rs.	Acres.	Acres.	Acres.	Miles.	Miles.	Miles.	Acres.	Acres.	Acres.
Bengal.												
Orissa Project	4,65,490	4,41,057	4,08,145	197,746	200,828	203,540	1,381	1,382	1,403	143·19	145·31	145·07
Midnapore Canal	2,28,730	2,37,840	2,33,373	74,901	72,105	80,318	367	367	385	204·09	196·47	208·61
Hijili Tidal Canal	74,310	53,137	47,348	...	...	...	29	29	29	...	...	...
Sone Project	10,71,410	10,89,654	11,10,586	440,796	454,093	432,413	1,596	1,586	1,585	276·18	286·31	272·81
Total Bengal	18,39,940	18,21,688	17,99,452	713,443	727,026	716,271	3,373	3,364	3,402	211·51	216·11	210·54
United Provinces of Agra and Oudh.												
Ganges Canal	39,18,770	44,33,280	46,58,265	901,602	1,261,601	774,104	4,786	4,845	4,935	188·38	260·39	156·86
Lower Ganges Canal	24,86,040	24,36,053	23,94,403	704,138	746,096	621,083	4,173	3,934	4,038	168·73	189·65	153·80
Agra Canal	6,80,120	8,27,535	9,25,600	209,966	264,427	190,177	874	883	888	240·23	299·46	214·16
Eastern Jumna Canal	14,98,030	14,91,263	14,82,347	279,072	321,468	249,680	1,206	1,229	1,249	245·92	261·56	199·90
Fatehpur Branch	...	76,330	84,891	...	23,280	19,787	...	434	459	...	53·64	43·10
Total United Provinces	85,82,960	92,64,461	95,45,506	2,112,778	2,616,872	1,854,831	11,041	11,325	11,569	191·35	231·07	160·32
Punjab.												
Western Jumna Canal, including Sirsa Branch	27,92,550	29,73,128	25,15,035	649,148	612,041	521,341	2,381	2,372	2,363	272·63	258·02	220·62
Bari Doab Canal	32,26,360	31,95,833	32,48,876	771,451	762,078	861,301	1,520	1,558	1,700	507·53	489·13	506·64
Sirhind Canal	27,47,570	30,87,659	30,51,461	782,730	929,177	721,851	3,033	3,049	3,044	258·07	304·74	237·13
Lower Sohag and Para Canal	1,47,060	1,62,481	1,42,447	74,060	52,745	86,163	146	158	157	511·37	333·83	548·81
Chenab Canal	27,37,840	34,59,006	49,08,480	957,705	1,353,056	1,830,525	1,920	2,351	2,489	498·80	575·52	735·44
Sidhnai Canal	3,01,060	77,374	2,22,828	84,306	26,265	169,780	194	199	199	434·56	131·98	853·16
Total Punjab	1,19,52,440	1,29,55,481	1,40,89,127	3,320,000	3,735,362	4,190,961	9,194	9,687	9,952	361·10	385·60	421·11
Madras.												
Godavari Delta System	33,02,430	29,38,311	33,18,847	776,493	749,612	825,519	2,408	2,408	2,415	322·46	311·30	341·83
Kistna " "	27,71,900	28,06,313	29,30,361	566,277	589,354	600,002	1,997	1,997	1,997	283·56	295·12	300·45

Penner River Canals	6,27,980	5,32,281	6,34,417	150,453	140,683	1,57,736	447	447	447	336·58	314·72	352·87
Cauvery Delta System	43,52,410	42,44,978	39,31,614	994,118	954,123	993,589	2,094	2,094	2,094	474·74	455·64	474·49
Srivaikuntham Anicut System	1,91,500	1,93,158	2,05,340	42,740	41,090	45,715	90	90	90	474·88	456·55	507·94
Kurnool Canal	1,62,320	1,86,939	1,69,548	48,810	77,216	62,159	503	503	503	97·03	153·51	123·57
Barur Tank	12,110	13,530	12,747	4,901	5,564	5,128	32	32	32	153·15	173·[illegible]7	160·25
Periyar Project	4,70,000	5,34,990	6,02,315	109,025	129,232	1,42,869	162	200	210	672·99	646·16	680·32
	1,18,90,650	1,14,50,500	1,18,05,189	2,692,817	2,686,874	2,832,717	7,733	7,771	7,788	348·22	345·75	354·62
Deduct—Old Irrigation Revenue	41,10,730	41,11,030	36,86,045	...	...	...	...	...	...	...	...	...
Total Madras	77,79,920	73,39,470	81,19,144	...	...	...	...	...	...	...	...	...
Bombay.												
SIND — Desert Canal	1,61,890	1,82,525	2,10,607	104,827	125,588	151,863	192	192	218	545·97	654·10	696·62
SIND — Unharwah	1,40,130	1,44,987	1,64,841	72,805	76,041	85,378	96	96	96	758·38	792·09	889·35
SIND — Begari Canal	4,60,330	5,04,252	5,36,305	254,729	259,525	285,550	158	158	158	1,612·21	1,642·56	1,807·28
SIND — Eastern Nara Works	5,70,400	7,24,618	5,76,643	256,290	338,826	266,295	285	285	257	899·[illegible]6	1,188·86	1,036·16
SIND — Jamrao Canal	...	13,918	3,42,878	...	8,160	172,347	...	...	529	...	...	325·79
	13,32,750	15,70,300	18,31,274	688,651	808,140	961,433	731	731	1,258	942·06	1,105·52	764·25
Deduct—Old Irrigation Revenue	37,050	37,057	37,057	...	...	...	...	...	...	...	...	...
Total Sind	12,95,700	15,33,243	17,94,217	...	...	...	...	...	...	...	...	...
DECCAN AND GUJARAT — Hathmati Canal	13,900	5,408	231	4,279	110	1,787	51	51	51	83·90	2·15	35·04
DECCAN AND GUJARAT — Lower Panjhra River Works	17,840	15,590	15,233	3,593	2,446	2,684	45	45	45	79·84	54·35	59·64
DECCAN AND GUJARAT — Kadwa River Works	13,270	8,308	5,81	2,659	3,121	3,020	39	39	39	68·18	80·02	77·43
DECCAN AND GUJARAT — Lakh Canal	2,850	1,568	701	979	1,053	982	32	32	32	30·59	32·90	30·68
DECCAN AND GUJARAT — Mutha Canals	2,54,600	3,20,423	2,11,846	8,045	8,725	8,204	155	155	155	51·90	56·29	52·92
DECCAN AND GUJARAT — Ekruk Tank	30,430	30,707	24,110	3,864	4,993	1,937	48	48	48	80·50	104·02	40·35
DECCAN AND GUJARAT — Krishna Canal	50,830	47,260	22,503	3,970	6,511	8,288	64	64	64	62·03	101·73	129·50
Total Deccan and Gujarat	3,83,720	4,29,264	2,80,695	27,389	26,959	26,902	434	434	434	63·10	62·11	61·98
Total Bombay	16,79,420	19,62,507	20,74,912	716,040	835,099	988,335	1,165	1,165	1,692	614·62	716·82	584·12
TOTAL PRODUCTIVE	3,18,34,680	3,33,43,607	3,56,28,141	9,555,078	10,601,233	10,583,115	32,506	33,312	34,403	293·94	318·24	307·62

STATEMENT No. III.

Financial results of individual Protective Irrigation Works during, and to the end of, 1900-1901.

Number of works.	Major Works.	Capital outlay to end of 1900-1901. Direct.	Indirect.	Total.	Revenue Account for 1900-1901. Gross revenue.	Maintenance and working.	Net revenue.	Interest.	Net profit.	Percentage of net revenue on the Capital outlay.	Revenue Account to end of 1900-1901. Gross revenue.	Maintenance and working.	Net revenue.	Interest.	Net profit.
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.		Rs.	Rs.	Rs.	Rs.	Rs.
	Protective.														
2	BENGAL.														
	Irrigation.														
	Dhaka Canal	30,283	698	30,986	...	...	...	955	—955	...	...	...	...	955	—955
	Tribeni Canal	1,22,723	2,234	1,24,957	...	...	...	4,579	—4,579	...	...	...	...	4,579	—4,579
	Total Bengal	1,53,011	2,932	1,55,943	...	...	...	5,534	5,534	...	...	...	...	5,534	—5,534
1	UNITED PROVINCES OF AGRA AND OUDH.														
	Irrigation.														
	Betwa Canal	42,68,294	2,23,633	44,91,927	56,623	92,627	—36,004	1,68,296	—2,04,300	...	10,99,057	15,42,327	—4,43,270	28,16,844	—32,60,114
1	PUNJAB.														
	Irrigation.														
	Swat River Canal	39,91,707	1,47,174	41,38,881	5,27,009	96,444	4,30,565	1,59,477	2,71,088	10·41	42,98,328	14,06,719	28,91,609	27,48,690	1,42,919
1	MADRAS.														
	Irrigation.														
	Rushikulya Project	43,89,544	3,97,598	47,87,142	(b) 93,729	82,783	10,946	1,74,763	—1,63,817	·23	4,88,093	3,31,324	1,56,769	16,69,901	—15,13,132
6	BOMBAY.														
	Deccan and Gujarat.														
	Irrigation.														
	Gokak Canal, 1st Section	4,00,939	11,727	4,12,666	(c)	(c)	(c)	16,038	—16,038	...	24,740	20,997	3,743	3,05,245	—3,01,502
	Mhasvad Tank	19,90,753	88,702	20,79,455	21,195	10,529	10,666	79,546	68,880	·51	2,44,618	2,50,173	—5,555	14,45,492	—14,51,047
	Nira Canal	53,57,257	3,27,753	56,85,010	1,33,847	51,555	82,292	2,14,254	—1,31,962	1·45	10,99,361	6,96,814	4,02,547	31,39,543	—30,36,996
	Shetphal Tank	3,76,274	9,460	3,85,734	...	...	...	11,687	—11,687	...	...	...	...	28,689	—28,689
	Chankapur Tank	1,04,367	4,415	1,08,782	...	...	...	3,905	—3,905	...	...	...	...	53,511	—53,511
	Maladevi Tank	2,01,751	6,364	2,08,115	...	...	...	6,656	—6,656	...	...	...	..	30,911	—30,911
	Total Bombay	84,31,341	4,48,421	88,79,762	1,55,042	62,084	92,958	3,32,086	—2,39,128	1·05	13,68,719	9,67,984	4,00,735	53,03,391	—49,02,656
11	Total Protective	2,12,33,897	12,19,758	(a) 2,24,53,655	8,32,403	3,33,938	4,98,465	8,40,156	—3,41,691	2·22	72,54,197	42,48,354	30,05,843	1,25,44,360	—95,38,517

(a) Exclusive of the cost of works for which neither Capital nor Revenue Accounts are kept.

(b) Excludes revenue due to old irrigation.

(c) This is now classed as a minor work and combined with Gokak Storage Works.

STATEMENT No. IV.

Protective Irrigation Works—Gross Revenue, Irrigated area and mileage open.

Major Works.	Gross Revenue.			Irrigated area in acres.			Mileage in operation (including distributaries).			Area irrigated for each mile of canal open.		
	1898-99.	1899-00.	1900-01.	1898-99.	1899-00.	1900-01.	1898-99.	1899-00.	1900-01.	1898-99.	1899-00.	1900-01.
	Rs.	Rs.	Rs.	Acres	Acres.	Acres.	Miles.	Miles.	Miles.	Acres.	Acres.	Acres.
United Provinces of Agra and Oudh.												
Betwa Canal	1,10,250	94,177	56,623	39,560	36,622	33,260	592	592	600	66·82	61·86	55·43
Punjab.												
Swat River Canal	4,54,650	4,59,180	5,27,009	139,759	158,106	166,031	204	204	208	685·09	775·03	798·22
Madras.												
Rushikulya Project	1,41,380	1,51,156	1,46,986	82,965	81,794	82,554	200	200	206	414·82	408·97	400·74
Deduct—Old Irrigation Revenue	53,560	53,257	53,257	...	...	...	...	...	...	...	...	...
Total Madras	87,820	97,899	93,729	82,965	81,794	82,554	200	200	206	414·82	408·97	400·74
Bombay.												
Deccan and Gujarat. Mhasvad Tank	21,160	25,756	21,195	6,101	13,657	5,842	94	94	94	64·90	145·28	62·15
Deccan and Gujarat. Nira Canal	1,42,430	1,48,174	1,33,847	34,360	27,200	51,728	228	228	239	150·70	119·29	216·43
Total Bombay	1,63,590	1,73,930	1,55,042	40,461	40,857	57,570	322	322	333	125·65	126·88	172·88
Total Protective	8,16,310	8,25,186	8,32,403	302,745	317,379	339,415	1,318	1,318	1,347	229·70	240·80	251·98

STATEMENT No. V.

Financial results of individual Minor Works during, and to the end of, 1900-1901.

[Excluding surveys.]

Number of works.	Minor Works.	Capital outlay to end of 1900-1901.			Revenue Account for 1900-1901.				Revenue Account to end of 1900-1901.		
		Direct.	Indirect.	Total.	Gross revenue.	Maintenance and working.	Net revenue.	Percentage of net revenue on Capital outlay.	Gross revenue.	Maintenance and working.	Net revenue.
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.		Rs.	Rs.	Rs.
3	RAJPUTANA.										
	Irrigation.										
	Tanks in Ajmere Sub-Collectorate.	16,65,673	50,333	17,16,006	46,515	23,973	22,542	1·31	15,43,959	8,04,532	7,39,427
	Tanks in Beawar Sub-Collectorate.	8,40,155	44,937	8,85,092	27,264	88,718	-61,454	...	11,71,237	8,42,390	3,28,847
	Tanks in Todgarh Sub-Collectorate.	3,41,006	6,969	3,47,975	17,474	-18,170	35,644	10·24	5.90,227	3,63,017	2,27,210
	TOTAL .	28,46 834	1,02,239	29,49,073	91,253	94,521	-3,268	...	33,05,423	20,09,939	12,95,484
2	BALUCHISTAN.										
	Irrigation.										
	Khushdil Khan Reservoir .	9,23,308	12,243	9,35,551	13,167	9,899	3,268	·35	1,87,320	1,10,572	76,748
	Shebo Canal . . .	6,65,788	11,443	6,77,231	22,060	11,945	10,115	1·49	1,91,887	1,22,534	69,353
	TOTAL .	15,89,096	23,686	16,12,782	35,227	21,844	13,383	·83	3,79,207	2,33,106	1,46,101
2	BURMA.										
	Irrawaddy embankments .	30,58,926	83,174	31,42,100	9,08,833	2,37,508	6,71,325	21·38	1,55,93,967	43,05,624	1,12,88 343
	Tongwa Island embankment	2,22,594	5,315	2,27,909	82,433	21,892	60,541	26·56	2,52,556	93,168	1,59,388
	TOTAL .	32,81,520	88,489	33,70,009	9,91,266	2,59,400	7,31,866	21·72	1,58,46,523	43,98,792	1,14,47,731
3	BENGAL.										
	Irrigation.										
	Saran Project . . .	6,79,377	27,183	7,06,560	669	1,821	-1,152	...	2,54,771	3,94,194	-1,39,423
	Navigation.										
	Calcutta and Eastern Canals	65,59,284	7,141	66,56,425	4,25,416	2,64,933	1,60,483	2·41	2,57,54,592	1,10,16,902	1,47,37,690
	Orissa Coast Canal . .	43,72,764	1,06,616	44,79,380	50,961	57,616	-6,655	...	10,15,688	11,89,588	-1,73,900
		1,09,32,048	2,03,757	1,11,35,805	4,76,377	3,22,549	1,53,828	1·38	2,67,70,280	1,22,06,490	1,45,63 790
	TOTAL .	1,16,11,425	2,30,940	1,18,42,365	4,77,046	3,24,370	1,52,676	1·29	2,70,25,051	1,26,00,684	1,44,24,367
4	UNITED PROVINCES OF AGRA AND OUDH.										
	Irrigation.										
	Dun Canals	7,23,354	18,049	7,41,403	1,06,666	60,862	45,804	6·17	29,89,891	16,23,789	13,66,102
	Rohilkhand Canals . .	17,79,017	1,70,475	19,49,492	2,10,478	1,21,115	89,363	4·58	42,17,362	33,90,298	8,27,064
	Bijnor Canals . . .	1,71,977	24,684	1,96,661	42,443	28,338	14,105	7·17	7,17,036	3,01,825	4,15,211
	Bundelkhand Irrigation Works	74,361	8,037	82,398	10,832	9,243	1,589	1·93	2,37,382	2,74,696	-37,314
	TOTAL .	27,48,709	2,21,245	29,69,954	3,70,419	2,19,558	1,50,861	5·08	81,61,671	55,90,608	25,71,063
5	PUNJAB.										
	Irrigation.										
	Upper Sutlej Inundation Canals.	7,71,847	66,215	8,38,062	2,81,451	2,65,090	16,361	1·95	59,17,087	50,56,506	8,60,581
	Indus Inundation Canals .	6,87,906	19,729	7,07,635	4,14,539	2,47,859	1,66,680	23·55	91,98,813	85,25,048	6,73,765
	Shahpur Inundation Canals .	2,05,535	9,872	2,15,407	1,08,674	46,706	61,968	28·78	12,05,490	7,02,726	5,02,764
	Ghaggar Canals . . .	2,92,797	8,556	3,01,353	...	21,705	-21,705	...	305	95,894	-96,589
	Kabul River Canals . .	4,81,134	2,148	4,83,282	1,40,583	36,887	1,03,696	21·46	6,61,702	2,63,807	3,97,895
	TOTAL .	24,39,219	1,06,520	25,45,739	9,45,247	6,18,247	3,27,000	12·84	1,69,83,397	1,46,44,981	23,38,416

Number of works.	Minor Works.	Capital outlay to end of 1900-01. Direct.	Indirect.	Total.	Revenue Account for 1900-01. Gross revenue.	Maintenance and working.	Net revenue.	Percentage of net revenue on Capital outlay.	Revenue Account to end of 1900-01. Gross revenue.	Maintenance and working.	Net revenue.
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.		Rs.	Rs.	Rs.
28	**MADRAS.** *Irrigation.*										
	Chembrambakam Tank	6,34,679	1,12,428	7,47,107	377	—772	1,149	·15	8,23,654	1,21,097	7,02,557
	Madras Water-supply and Irrigation Extension Project.	15,15,827	2,38,218	17,54,045	27,771	2,776	24,995	1·42	5,54,616	5,15,069	39,547
	Palar Anicut System	19,82,308	1,08,029	20,90,337	38,373	61,525	—23,152	...	36,50,123	20,28,444	16,21,679
	Lower Coleroon Anicut System	12,30,136	35,367	12,65,503	2,88,507	49,582	2,38,925	18·88	1,15,99,333	17,68,571	98,30,762
	Felandorai Anicut System	5,48,988	45,856	5,94,844	32,961	13,866	19,095	3·21	4,00,855	5,36,399	—1,35,544
	Shatiatope Anicut System	2,24,340	5,821	2,30,161	1,00,200	20,005	80,195	34·84	29,98,073	7,11,924	22,86,149
	Tirukkoyilur Anicut System	2,57,113	6,758	2,63,871	31,592	20,732	10,860	4·12	9,27,770	5,17,445	4,10,325
	Cheyar Anicut System	3,97,042	11,109	4,08,151	33,801	8,276	25,525	6·25	11,21,659	7,18,474	4,03,185
	Poiney Anicut System	2,30,105	6,185	2,36,290	24,611	16,463	8,148	3·45	14,19,101	6,72,344	7,46,757
	Sagileru Project	4,39,836	17,433	4,57,269	520	3,636	—3,116	...	7,836	14,370	—6,534
	Muniyar Project	5,36,564	28,080	5,64,644	9,772	4,7[illegible]6	5,066	·90	20,724	14,193	6,531
	Chopaud Project	1,72,415	3,976	1,76,391	...	...	...	...	...	...	...
	Other (12) works	9,57,304	43,651	10,00,955	2,11,249	90,101	1,21,148	12·10	55,62,490	26,20,935	29,41,555
		91,26,657	6,62,911	97,89,568	7,99,734	2,90,896	5,08,838	5·20	2,90,86,234	1,02,39,265	1,88,46,969
	Navigation.										
	Buckingham Canal	84,86,561	4,87,317	89,73,878	71,180	91,759	—20,579	...	33,41,501	34,64,478	—1,22,977
	Other (3) works	3,06,039	16,654	3,22,693	1,112	4,570	—3,458	...	15,398	1,08,798	—93,400
		87,92,600	5,03,071	92,96,571	72,292	96,329	—24,037	...	33,56,899	35,73,276	—2,16,377
	TOTAL	1,79,19,257	11,66,882	1,90,86,139	8,72,026	3,87,225	(a) 4,84,801	2·54	3,24,43,133	1,38,12,541	1,86,30,592
7	**BOMBAY.** SIND. *Irrigation.*										
	Sukkur Canal	13,48,925	60,514	14,09,439	1,69,518	52,889	1,16,629	8·27	26,65,782	14,73,366	11,92,416
	Ghar Canal	4,17,280	25,485	4,42,765	6,30,605	1,65,409	4,65,196	105·07	1,80,89,694	53,79,891	1,27,09,803
	Marak Great Canal	2,07,436	8,310	2,15,746	51,126	20,593	30,533	14·15	15,91,409	6,12,963	9,78,446
	Sarfrazwah Canal	1,18,559	6,121	1,24,680	22,139	11,595	10,544	8·46	5,54,009	3,54,963	1,99,046
	Fuleli Canal	16,34,200	60,815	16,95,015	5,36,471	1,21,216	4,15,255	24·50	1,11,40,936	63,02,940	48,37,996
	Other works (2)	89,225	6,732	95,957	10,748	5,882	4,866	5·07	3, ,953	2,86,798	77,155
	TOTAL SIND	38,15,625	1,67,977	39,83,602	14,20,607	3,77,584	10,43,023	26·[illegible]8	3,44,05,783	1,44,10,921	1,99,94,862
27	DECCAN AND GUJARAT. Khari Cut	4,12,179	17,801	4,29,980	579	8,342	—7,763	...	1,37,657	91,378	46,279
	Jamda Canals	9,91,158	49,911	10,41,069	6,284	30,447	—24,163	...	1,91,818	4,12,044	—2,20,226
	Parsul Tank	2,08,007	6,988	2,14,995	1,432	1,153	279	·13	16,769	11,895	4,874
	Pravara River Works—Ojhar Canal	3,18,210	20,640	3,38,850	3,335	17,885	—14,550	...	1,33,696	2,24,666	—90,970
	Bhatodi Tank	3,52,685	27,022	3,79,707	2,707	12,303	—9,596	...	1,15,090	1,26,736	—11,646
	Matoba Tank	1,88,148	13,274	2,01,422	4,452	2,663	1,789	·89	1,59,177	57,654	1,01,523
	Shirsuphal Tank	2,12,199	12,369	2,24,568	814	1,921	—1,107	...	47,857	57,279	—9,422
	Bhadalvadi Tank	2,13,115	14,307	2,27,422	1,927	2,047	—120	...	46,319	42,992	3,327
	Ashti Tank	7,57,057	79,041	8,36,098	6,117	47,783	—41,666	...	75,663	1,54,780	—79,117
	Upper Man River Works	4,15,835	23,372	4,39,207	1,770	19,217	—17,447	...	83,892	1,15,789	—31,897
	Yerla River Irrigation Works	6,98,767	44,631	7,43,398	8,140	38,007	—29,867	...	1,57,784	2,11,727	—53,943
	Maini Tank	4,20,045	24,432	4,44,477	2,075	2,931	—856	...	1,16,508	1,09,066	7,442
	Madag Tank	1,61,248	6,350	1,67,598	2,146	1,375	771	·46	59,036	65,009	—5,973
	Gokak Canal, 1st Section and Storage Works	8,78,238	43,799	(c) 9,22,037	31,839	8,451	23,388	2·54	2,78,310	74,326	2,03,984
	Other Works (13)	7,45,126	90,908	8,36,034	15,145	14,732	413	·05	3,56,084	2,69,266	86,818
	TOTAL DECCAN AND GUJARAT	69,72,017	4,74,845	74,46,862	88,762	2,09,257	—1,20,495	...	19,75,660	20,24,607	—48,947
	TOTAL BOMBAY	1,07,87,642	6,42,822	1,14,30,464	15,09,369	5,86,841	(b) 9,22,528	8·07	3,63,81,443	1,64,35,528	1,99,45,915
	GRAND TOTAL — IRRIGATION	3,34,99,054	18,75,095	3,53,74,149	47,43,184	20,93,128	26,50,056	7·49	11,03,98,669	5,39,46,413	5,64,52,256
81	GRAND TOTAL — NAVIGATION	1,97,24,648	7,07,728	2,04,32,376	5,48,669	4,18,878	1,29,791	·63	3,01,27,179	1,57,79,766	1,43,47,413
	GRAND TOTAL — TOTAL	5,32,23,702	25,82,823	5,58,06,525	52,91,853	25,12,006	27,79,847	4·98	14,05,25,848	6,97,26,179	7,07,99,669

(a) Excludes the share due to old Irrigation.
(b) Excludes the share due to old Irrigation.
(c) Exclusive of Rs. 4,12,666, expenditure incurred from the grant under 35.—Construction of Protective Irrigation Works which is shown under Major Works.

STATEMENT No. VI.

Minor Works.—Gross Revenue, Irrigated area and mileage open.

Minor works.	Gross Revenue.			Irrigated area in acres.			Mileage in operation (including distributaries).			Area irrigated for each mile of canal open.		
	1898-99.	1899-00.	1900-01.	1898-99.	1899-00.	1900-01.	1898-99.	1899-00.	1900-01.	1898-99.	1899-00.	1900-01.
	Rs.	Rs.	Rs.	Acres.	Acres.	Acres.	Miles.	Miles.	Miles.	Acres.	Acres.	Acres.
Rajputana.												
Tanks in Ajmere sub-collectorate	59,820	30,779	46,515	12,995	7,487	16,481	...	...	...	...	...	...
Tanks in Beawar sub-collectorate	33,660	18,750	27,264	8,891	4,173	13,703	...	...	...	...	...	...
Tanks in Todgarh sub-collectorate	25,600	17,883	17,474	3,674	1,736	4,583	...	...	...	...	...	...
Total Rajputana	1,19,080	67,412	91,253	25,560	13,396	34,767	...	...	...	...	...	...
Baluchistan.												
Khushdil Khan Reservoir	32,340	3,338	13,167	2,846	216	2,442	22	22	22	129·36	9·81	111·00
Shebo Canal	21,730	14,566	22,060	2,807	2,875	2,790	23	23	23	122·04	125·00	121·30
Total Baluchistan	54,070	17,904	35,227	5,653	3,091	5,232	45	45	45	125·62	68·69	116·26
Burma.												
Irrawaddy embankments	8,33,550	8,08,054	9,08,833	...	387,730	394,511	...	...	...	...	...	...
Tongwa Island embankment	51,740	42,065	82,433	...	37,044	40,483	...	...	...	...	...	...
Total Burma	8,85,290	8,50,119	9,91,266	...	424,774	434,994	...	...	...	...	...	...
Bengal.												
Saran Project	4,990	2,349	669	...	...	...	47	47	24	...	...	...
United Provinces of Agra and Oudh.												
Dun canals	1,14,700	1,00,914	1,06,666	16,110	21,414	17,237	82	82	83	196·46	261·14	207·67
Rohilkhand Canals	1,65,460	1,47,590	2,10,478	66,452	128,681	80,149	399	398	395	166·54	323·32	202·91

Bijnoor Canals	38,660	44,975	42,443	16,117	22,372	12,559	71	71	77	227·00	315·09	163·10
Bundelkhand Irrigation Works	9,690	9,854	10,832	4,438	4,984	3,848	66	66	66	67·24	75·51	58·30
TOTAL UNITED PROVINCNS	3,28,510	3,03,333	3,70,419	103,117	117,451	113,793	618	617	621	166·85	287·60	183·24
Punjab.												
Upper Sutlej Inundation Canals	2,84,130	3,06,367	2,81,451	151,459	130,937	290,134	404	440	514	374·89	297·58	564·46
Indus Inundation Canals	5,04,320	3,78,568	4,14,539	163,654	171,638	222,565	687	684	713	238·21	250·93	312·15
Shahpur Inundation Canals	94,320	98,227	1,08,674	24,762	33,597	50,381	173	173	173	143·01	194·20	291·22
Ghaggar Canals	300	...	...	17,223	11,480	39,109	62	62	62	277·79	185·16	630·79
Kabul River Canals	...	...	1,40,583	...	...	...	...	...	...	...	...	...
TOTAL PUNJAB	8,83,070	7,83,162	9,45,247	357,098	347,652	602,189	1,326	1,359	1,462	269·30	255·81	411·89
Madras.												
Chembrambakam Tank	31,060	37,535	377	15,732	17,527	11,965	27	27	27	582·66	649·14	443·15
Palar Anicut System	1,68,280	76,346	38,373	106,732	85,758	75,988	290	290	290	368·04	295·71	262·03
Pelandorai Anicut System.	33,330	35 149	32,961	9,908	10,842	10,011	63	63	63	157·27	172·09	158·90
Lower Coleroon Anicut	2,95,000	2,19,985	2,88,507	112,873	107,373	113,741	896	896	896	125·97	119·83	126·94
Madras Water-supply and Irrigation extension project	28,720	32,446	27,771	9,821	10,543	8,640	10	10	10	982·10	1,054·30	864·00
Shatiatope Anicut System	1,07,660	97,775	1,00,200	33,951	33,749	32,647	190	190	190	178·69	177·10	171·82
Tirukkoyilur Anicut System	37,470	38,286	31,592	25,766	26,457	24,941	163	163	163	158 07	162·31	153·01
Thadapalli Channel	30,750	31,684	31,456	14,984	14,860	15,071	76	76	76	197·15	195·52	198·30
Arkenkota Channel	8,960	9,095	9,869	4,195	4,323	4,293	24	24	24	174·79	180·12	178·87
Cheyar Anicut System	51,500	36,200	33,801	37,441	30,446	29,684	181	181	181	206·85	168·21	164·00
Poiney Anicut System	55,160	30,426	24,611	30,227	19,541	16,586	182	182	182	166·08	107·37	91·13
Dondapad Tank	450	461	367	109	118	125	4	4	4	27·25	29·50	31·25
Sagileru Project	7,280	34	520	6,965	4,278	4,712	12	14	14	580·41	305·57	336·57

STATEMENT No. VI.

Minor works—Gross Revenue, Irrigated area and mileage open.

	Minor works.	Gross Revenue.			Irrigated area in acres.			Mileage in operation (including distributaries).			Area irrigated for each mile of canal open.		
		1898-99.	1899-00.	1900-01.	1898-99.	1899-00.	1900-01.	1898-99.	1899-00.	1900-01.	1898-99.	1899-00.	1900-01.
		Rs.	Rs.	Rs.	Acres.	Acres.	Acres.	Miles.	Miles.	Miles.	Acres.	Acres.	Acres.
	Muniyar Project	8,440	2,515	9,772	2,923	868	2,359	67	67	67	43·62	12·95	35·21
	Ganjam Minor Rivers System	33,180	35,537	40,276	60,807	66,299	73,284	100	100	100	608·07	662·99	732·84
	Other works costing less than Rs. 1,00,000 each	1,44,700	1,23,444	1,29,281	91,163	84,694	87,556	265	265	265	344·00	319·60	330·40
	Total Madras	10,41,940	8,06,918	7,99,734	5,63,597	5,17,676	511,603	2,550	2,552	2,552	221·02	202·85	200·79
	Bombay.												
Sind	Sukkur Canal	1,07,490	1,11,788	1,69,518	78,778	75,209	99,569	130	130	130	605·98	578·53	765·91
Sind	Ghar Canal	4,51,630	4,89,719	6,30,605	198,444	2,6,861	274,689	298	298	297	665·92	727·59	924·88
Sind	Marak Great Canal	69,410	63,999	51,126	62,804	60,929	51,886	184	168	168	341·32	362·67	308·84
Sind	Sarfrazwah Canal	25,540	21,548	22,139	31,635	27,947	24,792	120	120	95	263·37	232·89	260·96
Sind	Fuleli Canal	4,51,730	4,46,303	5,36,471	373,594	361,593	406,741	1,043	1,045	1,048	358·19	346·02	388·11
	Other works costing less than Rs. 1,00,000 each	2,270	941	10,748	23,762	21,818	25,279	97	102	101	245·00	213·90	250·28
	Total Sind	11,08,070	11,34,298	14,20,607	7,69,017	7,64,317	882,956	1,872	1,863	1,839	410·80	404·84	480·13
Deccan and Gujarat	Khari Cut	18,020	4,919	579	2,805	...	2,062	31	31	36	90·48	...	57·28
Deccan and Gujarat	Mhasvad Tank	920	1,213	1,718	218	899	378	7	7	7	31·14	128·43	54·00
Deccan and Gujarat	Jamda Canals	11,130	8,878	6,284	2,585	4,515	3,757	114	114	114	22·67	39·60	32·95
Deccan and Gujarat	Parsul Tank	2,600	1,000	1,432	550	172	743	5	5	5	110·00	34·40	148·60
Deccan and Gujarat	Pravara River Works—Ojhar Canal	16,540	4,347	3,335	5,472	3,701	7,380	40	40	40	136·80	92·52	184·50
Deccan and Gujarat	Bhatodi Tank	4,880	4,859	2,707	743	870	1,039	10	10	10	74·30	87·00	103·90
Deccan and Gujarat	Matoba Tank	9,920	11,260	4,452	2,139	1,211	2,692	17	17	17	125·82	71·23	157·17
Deccan and Gujarat	Shirsuphal Tank	3,730	3,280	814	1,190	400	1,074	12	12	12	99·16	33·33	89·50

Bhadalvadi Tank	4,330	3,533	1,927	1,808	826	1,397	10	10	10	180'80	82'60	130'70
Ashti Tank	4,820	5,191	6,117	1,316	6,023	839	30	30	30	43'86	200'76	27'9[illegible]
Upper Man River Works	4,520	2,868	1,770	1,570	1,781	888	24	24	24	65'4	74'21	37'00
Yerla River Irrigation Works	10,940	10,293	8,140	3,859	4,126	1,767	33	33	33	116'94	125'03	53'54
Maini Tank	3,980	5,332	2,075	1,551	1,998	1,415	17	17	17	91'23	117'53	83'23
Muchkundi Tank	360	263	630	4	63	77	5	8	7	0'80	9'00	11'00
Madag Tank	2,020	2,358	2,146	833	1,314	827	9	9	9	92'55	146'00	91'89
Gokak Canal—1st Section and storage works.	31,200	35,349	31,839	6,455	8,424	10,508	44	44	44	146'70	191'45	238'82
Other works costing less than Rs. 1,00,000 each	19,560	17,427	12,797	4,107	2,279	3,079	41	40	40	100'17	56'97	76'97
TOTAL DECCAN AND GUJARAT	1,49,470	1,22,370	88,762	37,205	38,602	39,922	449	451	455	82'86	85'59	87'70
TOTAL BOMBAY	12,57,540	12,56,668	15,09,369	8,06,222	8,02,199	9,22,878	2,321	2,314	2,294	347'35	347'00	402'30
TOTAL MINOR WORKS	45,74,490	(a)40,87,866	47,43,184	1,861,247	2,286,959	2,625,456	6,907	6,934	6,998	269'47	329'82	375'17

STATEMENT No. VII.

General result of Irrigation Works in British India for which Capital and Revenue Accounts are kept.

—	Capital outlay to end of 1900-1901.	Gross Revenue during 1900-1901.	Maintenance charges during 1900-1901.	Net revenue during 1900-1901.	Percentage of net revenue to Capital outlay.	Percentage of maintenance charges to Gross Revenue.	Area irrigated (in acres).	Revenue realized per acre irrigated	Cost of maintenance per acre irrigated.
	Rs.	Rs.	Rs.	Rs.			Acres	Rs.	Rs.
Bengal.									
Productive	6,16,82,490	17,52,104	12,48,764	5,03,340	·82	71·27	716·271	2·45	1·74
Protective	1,55,943	...	...	...	...	...	...	...	...
Minor Works	7,06,560	669	1,821	*—1,152*	...	272·19	...	...	...
TOTAL BENGAL	6,25,44,993	17,52,773	12,50,585	5,02,188	·80	71·35	716·271	2·45	1·75
Bombay.									
Productive	3,09,90,446	20,74,912	5,67,488	15,07,424	4·86	27·35	988,335	2·10	·57
Protective	88,79,762	1,55,042	62,084	92,958	1·05	40·04	57,570	2·69	1·08
Minor Works	1,14,30,464	15,09,369	5,86,841	9,22,528	8·07	25·63	922,878	1·64	·64
TOTAL BOMBAY	5,13,00,672	37,39,323	12,16,413	25,22,910	4·92	32·53	1,968,783	1·90	·62
Madras.									
Productive	6,81,76,156	81,19,144	19,47,069	61,72,075	9·5	23·98	2,832,717	2·87	·69
Protective	47,87,142	93,729	82,783	10,946	·23	88·32	82,554	1·14	1·00
Minor Works	97,89,568	7,99,734	2,90,896	5,08,838	5·20	36·37	511,603	1·56	·57
TOTAL MADRAS	8,27,52,866	90,12,607	23,20,748	66,91,859	8·09	25·75	3,426,874	2·63	·68
United Provinces of Agra and Oudh.									
Productive	8,32,51,093	95,45,506	31,35,716	64,09,790	7·70	32·85	1,854,831	5·15	1·69
Protective	44,91,927	56,623	92,627	*—36,004*	...	163·59	33,260	1·59	2·81
Minor Works	29,69,954	3,70,419	2,19,558	1,50,861	5·08	59·27	113,793	3·26	1·93
TOTAL UNITED PROVINCES	9,07,12,974	99,72,548	34,47,901	65,24,647	7·19	34·57	2,001,884	4·98	1·72
Punjab.									
Productive	9,49,33,343	1,40,89,127	42,05,207	98,83,920	10·41	29·85	4,190,961	3·36	1·00
Protective	41,38,881	5,27,009	96,444	4,30,565	10·40	18·30	166,031	3·17	·58
Minor Works	25,45,739	9,45,247	6,18,247	3,27,000	12·84	65·41	602,189	1·57	1·03
TOTAL PUNJAB	10,16,17,963	1,55,61,383	49,19,898	1,06,41,485	10·47	31·60	4,959,181	3·14	·99
Burma.									
Productive	37,02,860	...	...	...	...	...	...	...	...
Minor Works	33,70,009	9,91,266	2,59,400	7,31,866	21·72	26·17	434,994	2·28	·60
TOTAL BURMA	70,72,869	9,91,266	2,59,400	7,31,866	10,35	26·17	434,994	2·28	·60
Rajputana.									
Minor Works	29,49,073	91,253	94,521	*— 3,268*	...	103·58	34,767	2·62	2·71
Baluchistan.									
Minor Works	16,12,782	35,227	21,844	13,383	·83	62·09	5,232	6·73	4·17
GRAND TOTAL, INDIA	40,05,64,192	4,11,56,380	1,35,31,310	2,76,25,070	6·90	32·88	13,547,986	3·04	1·00

Accompaniment to Accountant General's, Public Works Department, No. 10 I., dated the 5th May 1902.

Statement showing the financial results, as affecting the general tax-payer, in respect of the construction of Irrigation works in India, exclusive of works of minor importance, for which separate Capital and Revenue Accounts are not kept, during and to end of 1900-1901.

	To end of 1899-1900.	1900-1901.	To end of 1900-1901.
MAJOR WORKS.	Rs.	Rs.	Rs.
(1) PROTECTIVE—			
Revenue—			
Receipts in the Public Works Department	58,57,765	6,98,344	65,56,109
Receipts in the Civil Department (including share of land revenue), *less* collection charges	4,93,006	1,22,353	6,15,359
TOTAL REVENUE	63,50,771	8,20,697	71,71,468
Charges—			
Capital outlay — Charged to Protective grant	1,94,57,471	4,66,710	1,99,24,181
Capital outlay — Charged to Minor works grant	29,96,450	...	29,96,450
Working expenses	35,81,284	3,03,529	38,84,813
TOTAL CHARGES	2,60,35,205	7,70,239	2,68,05,444
Loss—(Gain +), including indirect charges.	—1,96,84,434	+50,458	—1,96,33,976
Indirect charges — Pertaining to Capital	*12,08,836*	*11,660*	*12,20,496*
Indirect charges — Ditto Revenue	*2,62,109*	*18,703*	*2,80,182*
Loss—(Gain+), including indirect charges	—2,11,55,379	+20,095	—2,11,35,284
(2) PRODUCTIVE—			
Revenue—			
Receipts in the Public Works Department	35,02,62,950	2,40,72,807	37,43,35,757
Receipts in the Civil Department (including share of land revenue), *less* collection charges	22,48,26,829	1,11,13,898	23,59,40,727
TOTAL REVENUE	57,50,89,779	3,51,86,705	61,02,76,484
Charges—			
Capital outlay — Charged to ordinary Revenues to end of 1884-85	5,40,24,150	...	5,40,24,150
Capital outlay — Charged to Minor works grant	21,20,810	63,106	21,83,916
Working expenses	19,93,94,008	1,00,32,815	20,94,26,823
Interest at 4 per cent. on Capital outlay not charged to Revenue to the 31st March 1900, and at 3¾ per cent. on outlay subsequent to that date.	18,51,14,244	1,07,32,435	19,58,46,679
TOTAL CHARGES	44,06,53,212	2,08,28,356	46,14,81,568
Gain, excluding indirect charges	+13,44,36,567	+1,43,58,349	+14,87,94,916
Indirect charges — Pertaining to Capital	*1,58,70,353*	*2,56,934*	*1,61,27,287*
Indirect charges — Ditto Revenue	*1,39,92,352*	*6,62,901*	*1,46,55,253*
Gain, including indirect charges	+10,45,73,862	+1,34,38,514	+11,80,12,376
TOTAL GAIN ON PROTECTIVE AND PRODUCTIVE WORKS. — Excluding indirect charges	+11,47,52,133	+1,44,08,807	+12,91,60,940
TOTAL GAIN ON PROTECTIVE AND PRODUCTIVE WORKS. — Including ditto	+8,34,18,483	+1,34,58,609	+9,68,77,092

Statement showing the Financial results, as affecting the general tax-payer, etc.—contd.

	To end of 1899-1900.	1900-1901.	To end of 1900-1901.
	Rs.	Rs.	Rs.
MINOR WORKS AND NAVIGATION.			
(1)—WORKS FOR WHICH CAPITAL AND REVENUE ACCOUNTS ARE KEPT.			
Revenue—			
Receipts in the Public Works Department	4,53,58,988	16,23,138	4,69,82,126
Receipts in the Civil Department (including share of land revenue), *less* collection charges	8,44,82,434	34,98,202	8,79,80,636
TOTAL REVENUE .	12,98,41,422	51,21,340	13,49,62,762
Charges—			
Capital outlay, excluding outlay shown against Proctective and Productive works	5,16,90,415	9,00,941	5,25,91,356
Working expenses	5,92,11,987	22,43,376	6,14,55,363
TOTAL CHARGES .	11,09,02,402	31,44,317	11,40,46,719
Gain, excluding indirect charges	+ 189,39,020	+19,77,023	+209,16,043
Indirect charges { Pertaining to Capital	*26,44,757*	*48,680*	*26,93,437*
Indirect charges { Ditto Revenue	*26,15,300*	*98,405*	*27,13,705*
Gain, including indirect charges	+136,78,963	+18,29,938	+1,55,08,901
(2) WORKS FOR WHICH ONLY REVENUE ACCOUNTS ARE KEPT.			
Receipts in the Public Works Department	(*a*) 1,19,66,277	4,11,092	1,23,77,369
Receipts in the Civil Department (including share of land revenue), *less* collection charges	(*b*) 8,87,49,608	55,73,645	9,43,23,253
TOTAL REVENUE .	10,07,15,885	59,84,737	10,67,00,622
Charges in the Public Works Department	4,74,75,645	28,41,799	5,03,17,444
Gain .	+5,32,40,240	+31,42,938	+5,63,83,178
TOTAL GAIN ON MINOR WORKS AND NAVIGATION. { Excluding indirect charges	+7,21,79,260	+51,19,961	+7,72,99,221
TOTAL GAIN ON MINOR WORKS AND NAVIGATION. { Including ditto	+6,69,19,203	+49,72,876	+7,18,92,079

(*a*) In the case of projects in Bombay, the figures are from 1872-73 only. Figures for earlier years are not obtainable.
(*b*) In the case of projects in Bombay, the figures are from 1874-75 only.

Public Works Department,

Irrigation Branch.

B

PROCEEDINGS OF THE MADRAS GOVERNMENT.

Read the following

From the Government of India P. W. D.
No 1228. C.W. I d/9' October 1902

No 1301 I d/11th November 1902

Communicated to the Chief Engineer for Irrigation for information.

Issue

28/10/02
D. I.

The Chief Engineer for Irrign with one copy of Review & note by the Acctt General P.W.D

28/11

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